

CLAIMS

1. A method for batching items into receptacles, said method comprising:

- determining an item weight by weighing the item on a first scale,
- 5 - determining initial weights of a plurality of receptacles by weighing the
 receptacles on receptacle scales,
- based on a comparison of the weight determined by weighing an item on the
 first scale and the initial weights of the receptacles, selecting one of the
 plurality of receptacles for the item thereby forming a batch,
- directing the item into the selected receptacle, and
- 10 - determining a resulting weight of the selected receptacle by weighing the
 receptacle on a corresponding receptacle scale.

2. A method according to claim 1, further comprising the step of comparing data received from the first scale with data received from at least one of the receptacle scales.

15 3. A method according to claim 1 or 2, further comprising the step of determining a first correlation insignia representing a correlation between the item weight determined by the first scale and an item weight calculated as a difference between the initial weight and the resulting weight of the selected receptacle.

20 4. A method according to claim 3, wherein at least one first correlation insignia is compared with a reference value expressing an acceptable difference between the first scale and a receptacle scale.

25 5. A method according to any of claims 3-4, wherein a first correlation insignia is determined for a plurality of receptacles during repeated batching of a plurality of items, and wherein a first correlation insignia of one receptacle is compared with a first correlation insignia of another receptacle.

6. A method according to claim 5, wherein the first correlation insignias are analysed for significant differences between one of the first correlation insignias and the other first correlation insignias.

30 7. A method according to any of claims 5-6, wherein an average of a plurality of first correlation insignias is compared with a reference value expressing an acceptable difference between the first scale and a receptacle scale.

8. A method according to any of claims 3-7, wherein at least one of the scales is adjusted based on a first correlation insignia.

5 9. A method according to any of the preceding claims, further comprising determining a second correlation insignia representing a correlation between the weight of items in a receptacle found by determining the weight of the receptacle by a corresponding receptacle scale, and a sum of the weights of the items determined by the first scale.

10. A method according to claim 9, wherein a second correlation insignia is determined for a plurality of receptacles, and wherein a second correlation insignia of one receptacle is compared with a second correlation insignia of another receptacle.

10 11. A method according to claim 10, wherein the second correlation insignias are analysed for significant differences between one of the second correlation insignias and the other second correlation insignias.

12. A method according to any of claims 9-11, wherein at least one second correlation insignia is compared with a reference value expressing an acceptable difference
15 between the first scale and a receptacle scale.

13. A method according to any of claims 10-12, wherein an average of a plurality of second correlation insignias is compared with a reference value expressing an acceptable difference between the first scale and a receptacle scale.

14. A method according to any of claims 9-13, wherein at least one of the scales is
20 adjusted based on a second correlation insignia.

15. A method according to any of the preceding claims, wherein it is determined if the resulting weight of a receptacle is significantly different from the initial weight of the receptacle after an item has been directed into the receptacle.

16. A method according to any of the preceding claims, wherein it is determined if the
25 resulting weight of any receptacle is significantly different from the initial weights of the receptacles after an item has been directed into a receptacle.

17. A method according to any of claims 3-16, wherein a correlation between a correlation insignia of one receptacle and a distance from the first scale to the receptacle is compared with a corresponding correlation between a correlation insignia
30 of another receptacle and a distance from the first scale to that other receptacle.

18. A method according to claim 17, wherein an item shrinkage measure is calculated based on a comparison of the correlations of at least two receptacles.

19. A method according to any of the preceding claims, wherein the first scale is a dynamic scale.

20. A method according to any of the preceding claims, wherein the receptacle scales are static scales.

5 21. A method according to any of the preceding claims, wherein a plurality of items each having a fixed weight, is batched and wherein the scales are adjusted based on comparing data received from the first scale with data received from at least one of the receptacle scales.

10 22. A method according to any of the preceding claims, wherein the first scale and at least one of the receptacle scales are used for counting numbers of items passing the first scale and ending in the receptacle, respectively.

23. An integrated item batching and information handling system for producing batches of items, said system comprising:

- a conveyor for conveying items across a scale,
- 15 – a dynamic scale for establishing data representing weights of items conveyed on the conveyor,
- means for discharging items from the conveyor,
- at least one receptacle arranged along the conveyor for receiving items discharged from the conveyor, and
- 20 – at least one static scale for establishing data representing weight of the at least one receptacle.

24. A system according to claim 23, further comprising a computer system connected to the first scale and at least one of the receptacle scales for comparing data received from the first scale with data received from at least one of the receptacle scales.

25 25. A system according to claim 23 or 24, wherein the computer system is adapted to determine a first correlation insignia representing a correlation between the item weight determined by the first scale and an item weight calculated as a difference between the initial weight and the resulting weight of the selected receptacle.

30 26. A system according to claim 25, wherein the computer system is adapted to compare at least one first correlation insignia with a reference value expressing an

acceptable difference between the first scale and a receptacle scale and depending on the result of the comparison, to transmit a first warning signal.

27. A system according to any of claims 25-26, wherein the computer system is adapted to determine a first correlation insignia for a plurality of receptacles during repeated batching of a plurality of items, and to compare a first correlation insignia of one receptacle with a first correlation insignia of another receptacle.

28. A system according to claim 27, wherein the computer system is adapted to analyse the first correlation insignias for significant differences between one of the first correlation insignias and the other first correlation insignias.

29. A system according to any of claims 27-28, wherein the computer system is adapted to compare an average of a plurality of first correlation insignias with a reference value expressing an acceptable difference between the first scale and a receptacle scale and depending on the result of the comparison, to transmit a second warning signal.

30. A system according to any of claims 25-29, wherein the computer system is adapted to adjust at least one of the scales based on a first correlation insignia.

31. A system according to any of claims 24-30, wherein the computer system is adapted to determine a second correlation insignia representing a correlation between the weight of a receptacle determined by a corresponding receptacle scale and a sum of weights of items directed into the receptacle, the items being weighed by the first scale.

32. A system according to claim 31, wherein the computer system is adapted to determine a second correlation insignia for a plurality of receptacles, and wherein a second correlation insignia of one receptacle is compared with a second correlation insignia of another receptacle.

33. A system according to claim 32, wherein the computer system is adapted to analyze the second correlation insignias for significant differences between one of the second correlation insignias and the other second correlation insignias.

34. A system according to any of claims 31-33, wherein the computer system is adapted to compare at least one second correlation insignia with a reference value expressing an acceptable difference between the first scale and a receptacle scale.

35. A system according to any of claims 32-34, wherein the computer system is adapted to compare an average of a plurality of second correlation insignias with a

reference value expressing an acceptable difference between the first scale and a receptacle scale.

36. A system according to any of claims 31-35, wherein the computer system is adapted to adjust at least one of the scales based on a second correlation insignia.

5 37. A system according to any of claims 24-36, wherein the computer system is adapted to determine if the resulting weight of a receptacle is significantly different from the initial weight of the receptacle after an item has been directed into the receptacle.

10 38. A system according to claim 37, wherein the computer system is adapted to generate a third warning signal in case the resulting weight and the initial weight is not significantly different after an item has been discharged into the receptacle.

15 39. A system according to any of claims 24-38, wherein the computer system is adapted to determine if the resulting weight of any receptacle is significantly different from the initial weights of the receptacles after an item has been discharged into a receptacle.

40. A system according to claim 39, wherein the computer system is adapted to generate a fourth warning signal in case the resulting weight and the initial weight is significantly different for a receptacle different from the one selected for the item.

20 41. A system according to any of claims 26-40, further comprising transmitting means for transmitting a warning signal to an operator of the system.

25 42. A system according to any of claims 25-41, wherein the computer system is adapted to compare a correlation between a correlation insignia of one receptacle and a distance from the first scale to the receptacle with a corresponding correlation between a correlation insignia of another receptacle and a distance from the first scale to that other receptacle.

43. A system according to claim 42, wherein the computer system is adapted to calculate an item shrinkage measure based on the comparison of the correlations of at least two receptacles.

30 44. A system according to any of claims 24-43, wherein the first scale is a dynamic scale.

45. A system according to any of claims 24-44, wherein the second scale is a static scale.

46. A system according to any of claims 24-45, wherein the computer system is an integrated computer system comprising one CPU receiving information from more than one scale.

5 47. A system according to any of claims 24-45, wherein the computer system comprises a plurality of CPUs connected individually to scales for obtaining weight information and information relating to a batching criterion for controlling the batching process of a corresponding receptacle individually.